DIRECT TESTIMONY OF

JACOB POUS

ON BEHALF OF THE

MASSACHUSETTS ATTORNEY GENERAL'S OFFICE

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SECTION I: QUALIFICATIONS, INTRODUCTION, AND OVERVIEW

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jacob Pous and my business address is 12113 Roxie Drive, Suite 110, Austin, Texas 78729.

Q. WHAT IS YOUR OCCUPATION?

A. I am a principal in the firm of Diversified Utility Consultants, Inc. ("DUCI"). A copy of my qualifications appears as Appendix A.

Q. PLEASE DESCRIBE DIVERSIFIED UTILITY CONSULTANTS, INC.

A. DUCI is a consulting firm located in Austin, Texas with an international client base. The personnel of DUCI provide engineering, accounting, economic, and financial services to its clients. DUCI provides utility consulting services to municipal governments with utility systems, to end-users of utility services and to regulatory bodies such as state public service commissions. DUCI provides complete rate case analyses, expert testimony, negotiation services and litigation support to clients in electric, gas, telephone, water, sewer, and cable utility matters.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN PUBLIC UTILITY PROCEEDINGS?

A. Yes. Appendix A also includes a list of proceedings in which I have previously presented testimony. In addition, I have been involved in numerous utility rate proceedings that resulted in settlements before testimony was filed. In total, I have participated in well over 300 utility rate proceedings in the United States and Canada. Also, worthy of note is that I have testified on behalf of the staff of five different state regulatory commissions.

Q. WHAT IS YOUR PROFESSIONAL BACKGROUND?

A. I am a registered professional engineer. I am registered to practice as a Professional Engineer in the State of Texas, as well as numerous other states.

Q. ON WHOSE BEHALF ARE YOU PROVIDING THIS TESTIMONY?

A. DUCI has been retained by the Massachusetts Attorney General's Office ("AG") to address Bay State Gas Company's ("BSG" or the "Company") depreciation request filed with the Commonwealth of Massachusetts Department of Telecommunications and Energy (The "Department").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to address issues I have identified regarding plant Account 376 – Mains and plant Account 380 Services including their sub-accounts based on my review of the Company's depreciation filing, responses to information request, information in the public domain and my extensive experience and judgment in the area of depreciation obtained over the last 30 plus years of employment in the utility industry. I specifically do not review the Company's other plant accounts for my testimony in this case.

Q. WHAT IS THE COMPANY REQUESTING IN THIS PROCEEDING?

A. The Company's depreciation study is based on plant in service at the end of 2003 and identifies a total annual depreciation accrual request of $29,240,069.[1] This represents a $5,653,655 or 24% increase in annual depreciation expense compared to the $23,586,414 annual depreciation accrual the existing depreciation rates would produce if they were to be retained.[2] The December 31, 2004 test year plant amounts utilized for overall revenue requirement purposes results in the Company seeking $28,844,934 of depreciation expense and represents a $4,968,090 increase compared to 2004 book depreciation.[3]

[1] Company depreciation study Section 2, Table 1, page 2, column (m).
[2] Id., at column (e).
[3] Exhibit BSG/JES-1, Schedule JES-7 page 2 of 4.

Q. WHAT ARE THE KEY ISSUES THAT CAUSED THE SIGNIFICANT INCREASE IN DEPRECIATION EXPENSE?

A. The majority of the Company's investment is reflected in two accounts: Accounts 376 – Distribution Mains and Account 380 - Distribution Services. These two accounts represent 84% of the entire distribution plant investment and 74% of the Company's entire investment as of December 31, 2003.

Q. PLEASE PROVIDE AN OVERVIEW OF YOUR TESTIMONY.

A. After reviewing the life and net salvage analyses performed by the Company for the two major distribution accounts, I recommend adjustments to the average service life ("ASL") and dispersion pattern for those two sub-accounts within the distribution mains category and adjustments to two net salvage proposals by the Company for Accounts 376 and 380.

- Net Salvage – The Company proposes to increase net salvage for mains from the existing negative 10% to a negative 15%. In addition, the Company has proposed a significant increase in net salvage for services from a negative 140% to a negative 170%. The Company's analysis is flawed and unsupported. The depreciation study references future expectations, trend analysis and industry information, yet fails to actually provide a specific and identifiable basis that would justify the proposed changes. Moreover, the trend analysis employed is flawed to the point that the Company's depreciation witness basically chooses not to rely on it. Finally, the Company's proposal does not appropriately employ a reasonableness check with industry data for its proposals, a practice employed by the Company's depreciation witness in other proceedings. Based on a review of the Company's actual historical data, industry information, information in the public domain and my experience and judgment, I recommend retention of the existing net salvage level for main and a negative 110% level for services as conservative estimates of net salvage for the investment in these accounts. These adjustments result in a $3,573,496 reduction to the Company's request on a stand-alone basis, based on plant as of December 31, 2003. The adjustment increases to $3,757,131 based on plant as of December 31, 2004.

- Life Analysis - The Company selection of ASLs and corresponding Iowa Survivor Curve dispersion patterns for its investment in Account 376.2 – Steel Mains – Coated/Wrapped and 376.4 – Plastic Mains reflects inappropriate curve fitting and life selection. The inappropriate analyses

results in an unjustified significant reductions from existing ASLs previously approved by the Department. As discussed later, matching the meaningful portion of observed life tables (actual retirement activity) , rather than forcing dispersion patterns to match insignificant transactions, and relying on other information results in the recommendation for longer ASLs for these two sub-accounts. The stand-alone impact of these two adjustments results in a $1,857,592 reduction to the Company's request based on plant as of December 31, 2003. The adjustment increases to $1,922,219 based on plant as of December 31, 2004.

- Interactive Impact – This summation of the individual prior adjustments will not produce the correct total combined impact. Life and net salvage adjustments interact when recommended for the same account. A longer ASL reduces the impact of net salvage proposals for the corresponding account. The combined impact of my various recommendations is an overall reduction to the Company's depreciation expense of $5,347,470 based on plant as of the end of 2003 is set forth on Schedule (JP-1). The overall reduction is $5,593,683 based on plant as of the end of 2004.

SECTION II: DEPRECIATION

A. GENERAL

Q. WHAT IS DEPRECIATION?

A. There are several definitions of depreciation. The most appropriate definition is one from the Federal Energy Regulatory Commission ("FERC"). The FERC definition for depreciation is:

> 'Depreciation', as applied to depreciable gas plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of gas plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities, and in the case of natural gas companies, the exhaustion of natural resources.[4]

Q. ARE THERE ADDITIONAL CONSIDERATIONS IN DEPRECIATON BEYOND THE DEFINITIONS?

[4] Code of Federal Regulations ("CFR") 18, Part 201, Definitions, 12B.

A. Yes. The definitions provide only a general outline of the overall utility depreciation concept. In order to arrive at a depreciation related revenue requirement in a rate proceeding, a depreciation system must be established.

Q. WHAT IS A DEPRECIATION SYSTEM?

A. A depreciation system constitutes the method, procedure, and technique employed in the development of depreciation rates.

Q. BRIEFLY DESCRIBE WHAT IS MEANT BY "METHOD".

A. Method identifies whether a straight-line, liberalized, compound interest, or other type of calculation is being performed. The straight-line method is normally employed for utility depreciation proceedings.

Q. BRIEFLY DESCRIBE WHAT IS MEANT BY "PROCEDURE".

A. "Procedure" identifies a calculation approach or grouping. For example, procedures can reflect the grouping of only a single item, items by vintage (year of addition), items by broad group or Average Life Grouping ("ALG"), and Equal Life Groupings. The ALG procedure is used by the vast majority of both electric and gas utilities. The Company's existing rates rely on the ALG procedure.

Q. PLEASE BRIEFLY DESCRIBE WHAT IS MEANT BY "TECHNIQUES".

A. There are two main techniques with various sub-groupings. The two main techniques are the whole life technique and the remaining life technique. The whole life technique simply reflects calculation of a depreciation rate based on the whole life of plant (e.g., a ten year life would imply a ten percent depreciation rate over the life of plant). Alternatively, the remaining life technique recognizes that depreciation is a forecast or estimation process that is never precisely accurate and requires "true-ups" in order to limit recovery to 100% of what a utility is entitled to over the entire life of the investment. Therefore, as time passes, the remaining life technique attempts to recover the remaining unrecovered balance over the

remaining life or other period of time. Most utilities rely on a remaining life technique in utility rate matters.

Q. DO THE METHODS, PROCEDURES, AND TECHNIQUES INTERACT WITH ONE ANOTHER?

A. Yes. Different depreciation rates will result depending on what combination of method, procedure, and technique is employed. The difference will occur even when beginning with the same ASL and net salvage values.

Q. WHAT IS "NET SALVAGE?"

A. Net salvage represents gross salvage obtained from retired property less the cost of removal. Net salvage can either be positive in cases where gross salvage exceeds cost of removal or negative in cases where cost of removal is greater than the value of gross salvage.

Q. HOW DOES NET SALVAGE AFFECT THE CALCULATION OF DEPRECIATION?

A. The intent of the depreciation process is to allow the Company to recover 100% of investment less net salvage. Therefore, if net salvage is a positive 10%, then the utility should only recover 90% of its investment through annual depreciation charges, under the theory that it will recover the remaining 10% through net salvage at the time the asset retires (e.g., 90% + 10% = 100%). Alternatively, if net salvage is a negative 10%, then the utility should be allowed to recover 110% of its investment through annual depreciation charges so that the negative 10% net salvage that is expected to occur at the end of the property's life will still leave the utility whole (i.e., 110% - 10% = 100%).

Q. PLEASE SUMMARIZE THE GENERAL CONCEPT OF DEPRECIATION FOR UTILITIES.

A. The concept of depreciation utilized for utility ratemaking has evolved over time. Currently, there are still many different combinations of methods, procedures, and techniques employed in the development of utility depreciation rates. The issue regarding the correct depreciation system along with the correct net salvage to be employed for utility ratemaking must, among other things, take into account whether the results are systematic and rational. In arriving at a conclusion, the regulator must further take into account the quality and quantity of data relied upon, as well as the judgment employed by the depreciation analyst. Judgment plays an important role in the establishment of depreciation rates given the subjectivity involved in the various estimation processes. While judgment is critical, that does not mean that an analyst can simply refer to "judgment" as the basis for a proposal without providing meaningful factual support for that "judgment;" nor can "judgment" serve as the basis for *ignoring* relevant facts. As will be discussed later, Mr. Robinson fails to provide a logical rationale for his judgment.

SECTION III: NET SALVAGE

A. GENERAL

Q. WHAT IS "NET SALVAGE?"

A. In order to understand the concept of net salvage, it is beneficial to define net salvage and the various components that comprise net salvage. Net salvage, as defined by the FERC and in National Association of Regulatory Utility Commissioner's ("NARUC") Uniform System of Accounts ("USOA") is:

> Net salvage value means the salvage value of property retired less the cost of removal.[5]

The definitions of salvage and cost of removal as set forth in Title 18 CFR Part 201 and in NARUC USOA are:

[5] Title 18 CFR Part 201, Definitions, 23.

> Salvage value means the amount received for property retired, less any expenses incurred in connection with the sale or in preparing the property for sale; or, if retained, the amount at which the material recoverable is chargeable to Materials and Supplies, or other appropriate amount.
>
> Cost of removal means the cost of demolishing, dismantling, tearing down or otherwise removing gas plant including the cost of transportation and handling incidental thereto.

Net salvage is simply the value received for the sale, reuse, or reimbursement of retired property (gross salvage) less the cost of retiring such property (cost of removal), whether the retirement reflects demolition of the item of plant or only the accounting transaction for retiring an item of property abandoned in place.

Due to the manner in which net salvage is calculated (gross salvage minus cost of removal), its value can be positive or negative. If gross salvage exceeds cost of removal, the net salvage is positive. On the other hand, if the cost of removal is greater than the gross salvage received in the process of retirement of an item of property, then the resulting net salvage value is negative.

Q. WHAT PERIOD HAS THE COMPANY CHOSEN TO ANALYZE ASSOCIATED WITH ITS NET SALVAGE ANALYSIS?

A. The Company has analyzed a 24-year period, 1980 through 2003.[6]

Q. HAVE YOU REVIEWED ALL THE INFORMATION PRESENTED BY THE COMPANY IN SUPPORT OF ITS NET SALVAGE REQUEST?

A. Yes. The information provided by the Company is inadequate to support or demonstrate the appropriateness of its request for an over negative 72% net salvage for distribution plant.[7]

[6] Company depreciation study, Section 7.

Q. WHAT ACCOUNTS ARE YOU RECOMMENDING TO CHANGE AS A RESULT OF YOUR NET SALVAGE ANALYSIS?

A. I am recommending a change to the two largest distribution accounts, as set forth in the table below. These two accounts comprise over 84% of the distribution plant.

COMPARISON OF NET SALVAGE VALUES

CATEGORY	COMPANY PROPOSAL	AG RECOMMENDED	CHANGE
Account 376 – Mains	**-15%**	**-10%**	**5%**
Account 380 – Service	**-170%**	**-110%**	**60%**

Q. WHY DO YOU BELIEVE THE COMPANY'S PROPOSED NET SALVAGE FACTORS ARE INAPPROPRIATE?

A. There are numerous problems with the Company's proposals. The basis for my recommendation is addressed under the net salvage account specific section of my testimony.

B. ACCOUNT SPECIFIC – NET SALVAGE ADJUSTMENTS

1. Mains

Q. WHAT IS THE COMPANY PROPOSING FOR NET SALVAGE FOR ACCOUNT 376 – DISTRIBUTION MAINS?

A. The Company proposes a negative 15% net salvage for this account. This represents an increase in the level of negative net salvage from the existing negative 10%.[8]

[7] Response to AG-5-5 (a) at pages 8, 9, 11, and 12.
[8] The Company's depreciation study, Section 2, pages 2-14 for proposed rate and page 2-3 for existing rate.

Q. HOW MUCH DOES THIS 5 PERCENTAGE POINT INCREASE IN NET SALVAGE REPRESENT?

A. Based on the depreciation study balance as of December 31, 2003, the proposed increase of 5 percentage points represents a request for an additional $14.8 million to be recovered over the remaining life of the investment or $461,927 per year.

Q. WHAT IS THE BASIS FOR THE COMPANY'S PROPOSED INCREASE IN NEGATIVE NET SALVAGE?

A. The basis for the higher level of negative net salvage is inferences obtained by Mr. Robinson based on his review of historical data. The depreciation study sets forth the following paragraph as the basis for its proposal:

> An analysis was completed relative to the Company's historical salvage experience for the period 1980-2003 which demonstrated that the Company has continually experienced negative salvage for this class of property. The net negative salvage has ranged from a negative three (3) plus percent to a negative eighty-five (85) percent with numerous of the years experiencing in excess of negative twenty (20) percent. The resulting overall average negative net salvage for the twenty-three [sic] year period (1980-2003) was negative twelve (12) percent. While negative net salvage had declined during the mid 1990's, more recent years net salvage activity has been at far higher levels. A forecast analysis was prepared based upon the company's historical data which projects a future net salvage for the property group of more than negative twenty-two (22) percent net salvage. Accordingly, it is anticipated that the Company will continue to experience negative net salvage in conjunction with retirement of its mains and its is further anticipated that the level of negative salvage will increase in future years as a percent of the original cost as the property continues to age as well as due to increasing local regulations and the resulting manpower requirements being placed upon the Company's operations. Giving consideration to the Company's experience and expectations, future net salvage relative to this property group is estimated at negative fifteen (15) percent. (Emphasis added)

Q. DO YOU AGREE WITH THE COMPANY'S BASIS FOR ITS PROPOSED NET SALVAGE?

A. No. While I agree that the level of net salvage should be negative, I disagree with the proposed increase in the level of negative net salvage.

Q. PLEASE EXPLAIN YOUR CONCERNS REGARDING THE COMPANY'S PROPOSAL.

A. While the Company has experienced negative net salvage in all prior periods, it has only exceeded the negative 15% level it is proposing two times in the past 10 years.[9] Moreover, not a single 3-year rolling band that the Company relies upon in developing its net salvage analysis exhibited a negative net salvage greater than 13% during the last 10 year period.[10] Thus, from a historical data standpoint, the Company's desire to increase the level of negative net salvage from a negative 10% to a negative 15% is not supported by its actual historical experience during its past 10 years. The historical experience during the past 10-years is more representative of a negative 10% net salvage.

Q. DOES THE COMPANY'S RELIANCE ON A FORECASTED COST OF REMOVAL EMPLOYING INFLATION FOR APPROXIMATELY 23 YEARS TO THE FUTURE YIELD REASONABLE RESULTS?

A. No. Mr. Robinson's use of his inflation based forecasting approach is not only inappropriate, but he also basically discards, ignores, or gives little weight to the results

Mr. Robinson's approach assumes there is a direct linear relationship between the age of retirements and the cost of removal incurred. While Mr. Robinson is correct that labor rates increase over time, and cost of removal has labor as a component, he fails to recognize any of the other factors that do affect the level of net salvage. Mr. Robinson ignores productivity gains, different mixes of piping

[9] Company depreciation study page 7-19.
[10] Id at page 7-20.

retired, different rates of abandonment, the concept of economies of scale, the wide dispersion that may transpire in the actual physical activity due to timing and location of retirements, the level of overtime that may vary from year to year, as well as other factors. Simply put, the relationship that Mr. Robinson relies upon to support his forecast model assumes that every factor other than inflation will remain identical to how it is reflected on average in the historical database. That concept represents a flawed model and any conclusions drawn from such a model must be ignored or given very limited consideration. Moreover, assuming arguendo that future inflation is the only factor to consider, Mr. Robinson's approach still produces a mismatch that results when one requires cost of removal expressed in future dollars to be collected from current customers in current dollars. It is inequitable to force current customers to pay now for future inflated costs that have not been discounted back to present values.

Q. WHAT DID YOU MEAN WHEN YOU STATED THAT MR. ROBINSON ALMOST ALWAYS DISCARDS THE RESULTS OF HIS TREND MODEL?

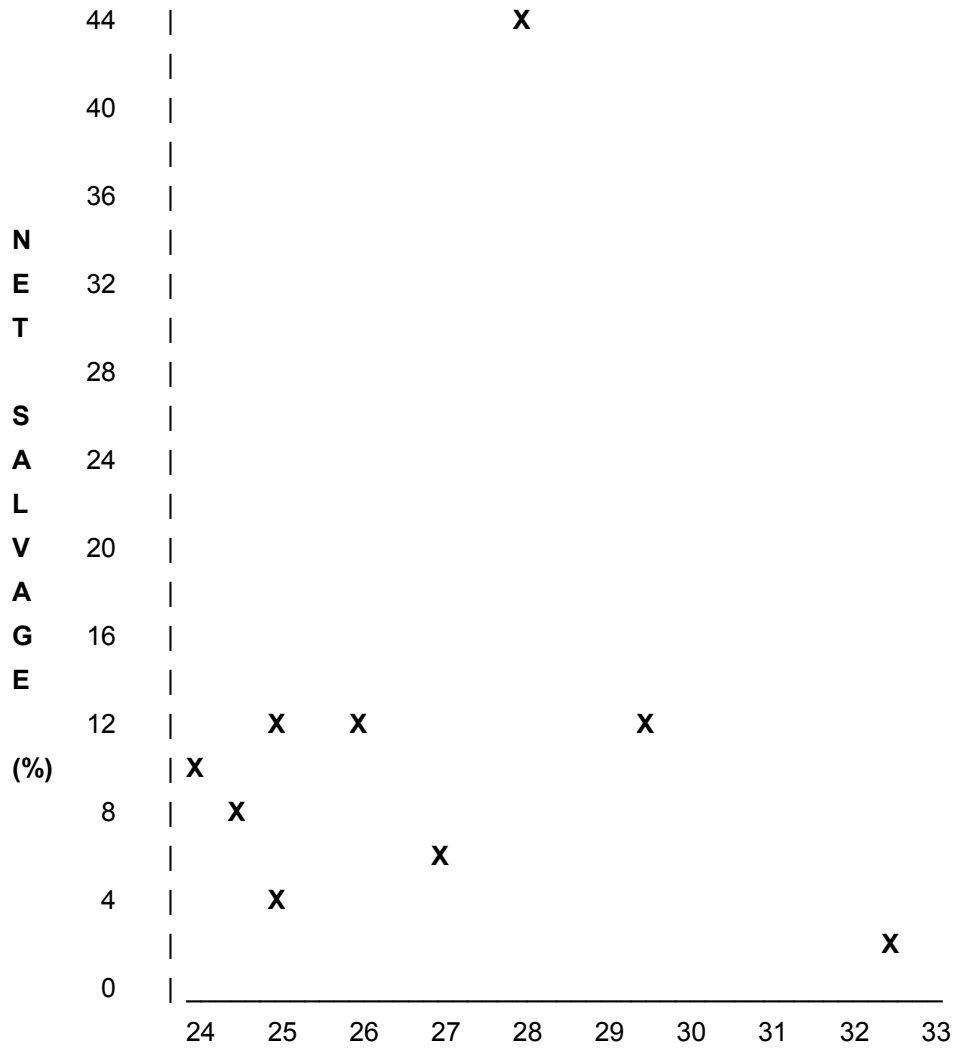
A. I am currently involved in another depreciation analysis in Florida, where Mr. Robinson is also the developer of the depreciation study on behalf of the utility. During a deposition taken during the latter part of June 2005, Mr. Robinson admitted for numerous accounts that he heavily discounted the forecasted trend analysis that he performs in his salvage calculations. In fact, it was a rare occasion, if at all, that the trend forecast developed by Mr. Robinson on an account-by-account basis ever matched his actual recommendation. This recognition by Mr. Robinson of the lack of credibility and usefulness of his own cost of removal trend forecast analysis carries forward into this case. For this account, Mr. Robinson’s forecast analysis yielded almost a 23% future cost of removal, yet he has proposed a negative 15%. While he may claim that his selection is conservative, realistically it simply reflects some level of recognition of the flawed model incorporated into his study. A more striking example of this

situation is the result for Account 380 - distribution services as set forth on page 7-27 of the depreciation study. There, Mr. Robinson forecasts a future 404% cost of removal yet proposes a negative 170% net salvage. If there were validity to Mr. Robinson's flawed model, he would undoubtedly rely on its results extensively. That is simply not the case.

Q. CAN YOU PROVIDE A COMPANY SPECIFIC EXAMPLE THAT DEMONSTRATES THE FALLACY OF MR. ROBINSON'S INFLATION MODEL FOR COST OF REMOVAL?

A. Yes. If Mr. Robinson's model were valid, one could plot the percentage relationship for cost of removal to retirements against the age of the retirements and observe a line sloping upward as age increase. As shown in the graph below, for account 376 for the past 9 years, the actual data would yield a downward slope and the age of the oldest retirements (32.3 years) have the lowest, not highest, percentage cost of removal. This Company's actual data clearly points out that Mr. Robinson's inflation model has no merit since many other factors affect cost of removal.

Historical Negative Net Salvage
Relationship to Age for Mains



Q. ARE THERE OTHER REASONS WHY YOU BELIEVE THAT THE COMPANY'S BASIS FOR ITS INCREASED NEGATIVE NET SALVAGE IS LESS THAN ADEQUATE?

A. Yes. The Company responded to information requests where it admits there are no future expectations or policies of the Company that would indicate a deviation from historical events.[11] Thus, Mr. Robinson's statement in the narrative that he gave consideration "to the Company's experience and expectations" has no meaningful impact.

The Company also admits that it normally accounts for what it might identify as the cost of removal as the cost of a new installation. This is proper accounting. This policy results in minimal amounts of true cost of removal attributable to those instances where no replacement activity exists.[12] Thus, from an accounting standpoint, there is no realistic policy, expectation, or practice by the Company that would indicate that a more negative net salvage for investment in this account is appropriate at this time.

Q. WHAT DO YOU RECOMMEND?

A. Based on these considerations and flaws with Mr. Robinson's analysis, I recommend the retention of the existing negative 10% net salvage for this Account 370.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. The stand-alone impact of my recommendation results in a reduction of the Company's depreciation expense of $467,431 based on plant as of the end of December 31, 2003, or a $486,057 reduction based on plant as of the end of 2004.

2. Services

Q. WHAT IS THE COMPANY PROPOSING FOR ACCOUNT 380 – DISTRIBUTION SERVICES?

A. The Company proposes a significant increase from the existing net salvage of a negative 140% to a negative 170%. Given that this account contains in excess of

[11] Response to AG 8-38 and 39.
[12] Response to AG 8-1.

$217 million of investment as of the end of 2003, the 30 percentage point increase (-140% to –170%) in negative net salvage proposed by the Company results in excess of $65 million of additional capital recovery over the remaining life of the investment.

Q. WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSED INCREASE IN NEGATIVE NET SALVAGE?

A. Once again, the Company's basis for its net salvage is limited to a fairly general a one-paragraph narrative that the Company provided addressing its proposal beginning at the bottom of page 4-15 of its depreciation study:

> The Company's historical net salvage experience relative to services has been analyzed for the years 1980 through 2003, which identifies the fact that the Company has continuously experienced negative net salvage relative to the retirement of this property. During the study period, negative net salvage has ranged from negative 1,724 percent to negative 88 percent and average negative one hundred-seventy-one (171) percent. While negative net salvage had declined during the mid 1990's, more recent years net salvage activity has been at far higher levels. Furthermore, a forecast analysis was completed on the Company's historical net salvage which projects future negative net salvage for the property group in excess of negative four hundred (400) percent. Giving consideration to the Company's overall twenty-three (23) years and recent net salvage experience, as well as the forecast analysis which recognized the anticipated far higher levels of future negative net salvage, future net salvage of negative (170) percent is currently estimated for this property group." (Emphasis added)

Q. HOW DO YOU INTERPRET THE COMPANY'S CLAIMED BASIS?

A. Mr. Robinson reviewed the historical data and correctly identifies it has been booked as being continuously negative. He then identifies the range as a negative 88% to a negative 1,724%, with an average negative 171% for the period reviewed. He then recognizes that the net salvage is becoming less negative during the mid 90s and then very carefully states that more recent years net salvage activity has been at "far higher levels." (Emphasis added) He then references his forecast analysis, which has previously been discussed, and notes

that the forecast produced a value in excess of negative 400%. Finally, he gives "consideration" to the historical data and "recent net salvage experience," and then once again references his forecasted analysis to somehow arrive at his negative 170% proposal.

Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL?

A. No. First and foremost, the Company's presentation of its support for its significant increase in negative net salvage for this account is inadequate. This is especially true when it is recognized that the request represents an approximate $370 million of capital recovery above and beyond the original $217 million actually invested in this account. In my opinion, the Company's presentation for approximately $587 million ($370 + $217) of capital recovery over the entire life of the investment is inadequate

Q. GIVEN THE COMPANY'S REQUEST, IS THERE AN INITIAL CONCERN ON ITS FACE?

A. Yes. Services are similar in nature to mains. While the services are smaller in size and run shorter lengths, they are still the same general type of product (i.e. they are pipe made up of either cast iron, bare steel, plastic, etc used to deliver gas to the ultimate customer for a local distribution company). The reason I point this out is that the Company proposes a negative 170% net salvage for this account, while for 376 – distribution mains it proposes only a negative 15% net salvage. This represents a ratio slightly in excess of 11 to 1. Given the size of this differential, concerns by the Company should have arisen. In fact, review of industry data indicates something in the order of 2 to 3 times the level of net salvage for services is reasonable compared to distribution mains.[13]

[13] American Gas Association Accounting Services Committee and the Edison Electric Property Accounting & Valuation Committee, A Survey of Depreciation Statistics.

Q. TURNING BACK TO THE COMPANY'S STATED BASIS FOR ITS PROPOSED NEGATIVE 170% NET SALVAGE, HAVE YOU ALSO REVIEWED THE COMPANY'S HISTORICAL DATA?

A. Yes. While the actual historical data does average a negative 171% for the period reviewed by the Company, there are several issues that cause concern regarding the data and reliance on the data as Mr. Robinson has done.

Q. PLEASE EXPLAIN YOUR CONCERNS REGARDING THE COMPANY'S DATABASE.

A. First, the underlying data is suspect given the number of services supposedly retired per year quite often exceeds the same claimed value in other presentations made by the Company. For example, the table below sets forth the Bare Steel services and Steel Coated/Wrapped services retired by year for the period 1999-2003, as obtained from the Company's response to AG-02-01 at page 44, compared to what should have been the same information provided in response to AG-2-40 at page 2 of 2 and AG-2-47 at page 2 of 2.

BARE STEEL SERVICES

Year	Total Bare Steel Services (AG-2-01 p4)	Year to Year Change (Retired) (AG-2-01 p4)	Bare Steel Services Retirements (AG-2-40 p2)
1999	67,286	1,090	1,814
2000	66,521	765	1,585
2001	65,292	1,229	1,503
2002	63,683	1,609	1,300
2003	62,135	1,548	1,397
2004	60,529	1,606	1,550

COATED/WRAPPED STEEL SERVICES

Year	Total CT/WRP Steel Services (AG-2-01 p4)	Year to Year Change (Retired) (AG-2-01 p4)	CO/WRP Steel Services Retirements (AG-2-47 p2)
1999	10,080	507	515
2000	9,665	415	473
2001	9,028	637	504
2002	8,891	137	379
2003	8,402	489	336
2004	7,585	817	437

If the Company is having trouble consistently identifying the number of services retired by year, it might help explain why the Company is requesting a negative net salvage relationship for services more than eleven times the level it is requesting for distribution mains. Again, this affects the credibility of the Company's presentation and, in particular, the data upon which it has relied for its proposals.

Q. DO YOU HAVE OTHER CONCERNS?

A. Yes. The Company's depreciation study narrative identifies a range of negative net salvage levels of negative 88% to negative 1,724%. The sheer magnitude of the range identified by the Company should raise the concern of any depreciation analyst. A depreciation analyst should attempt to determine what caused such a dramatic range of values and whether the range is affected by an outlier. I submit that any year that reflects a 1,700% negative net salvage is an outlier. Further, it is only reasonable to expect the Company's depreciation analyst would have reviewed not just the numbers in bulk, but the materiality, pattern and frequency of the values that transpire in this database before relying on such values. I fully recognize that the Company performs rolling 3-year bands in an attempt to average out individual annual occurrences. However, the Company's presentation does not reasonably demonstrate what particular values it relied

upon, or which particular values it discounted or discarded to arrive at the final proposal.

Q. ARE THERE FURTHER CONCERNS?

A. Yes. Part of the Company's basis for its request is a representation that "more recent years net salvage activity had been at far higher levels." A review of the Company's rolling 3-year band analysis as set forth on page 7-26 of its depreciation study indicates the last four individual 3-year rolling bands range from a low of negative 136% to a high of negative 159%. None of these more recent net salvage levels rise to what can be characterized as amounts at "far higher levels" than experienced during the mid 1990s.[14]

Q. ARE THERE YET OTHER CONCERNS REGARDING THE HISTORIC DATABASE OR MR. ROBINSON'S INTERPRETATION OF THE HISTORICAL DATABASE?

A. Yes. The review of the historic database during the past 10years indicates that three out of the four highest dollar levels of retirement activity correspond to the lowest levels of net salvage percentages experienced during the 10year period. In fact, the average of the four highest retirement dollar amount activity years produced only a 110% negative net salvage level. If the reference Mr. Robinson intended to make pertains to dollar amount retirement activity or dollar level of cost of removal activity, then the statement would be, at most, inapt since he is trying to establish a percentage relationship and not a specific dollar amount in proposing a negative 170% net salvage

Q. DOES THE PROCESS MR. ROBINSON USED IN HIS SELECTION PROCESS FOR THIS ACCOUNT APPEAR INCONSISTENT?

[14] If the reference Mr. Robinson intended to make pertains to dollar amount retirement activity or dollar level of cost of removal activity, then the statement would be, at most, inapt since he is trying to establish a percentage relationship and not a specific dollar amount in proposing a negative 170% net salvage.

A. Yes. I have attached the historical analysis page for this account from the 1991 depreciation study performed by Mr. Robinson as Schedule (JP-2). The following observations can be obtained from a review of this page: (1) the annual levels of net salvage were consistently becoming more negative over the most recent 5-year period (1986-1991), (2) the 3-year rolling bands were also becoming more negative, and (3) the levels of net salvage exceeded a negative 200% level for the 4 most recent years and the 3 most recent 3-year rolling bands. In that depreciation study it appears Mr. Robinson proposed a negative 150% net salvage level, or more than 100 percentage points lower than what he observed in the database.

Now, when faced with a more current database that shows less negative values for recent data, Mr. Robinson proposes an increase in net salvage of approximately 30 percentage points. This type of inconsistent actions raises additional concerns regarding the validity of the negative 170% proposed value.

Q. DO YOU BELIEVE IT WOULD BE APPROPRIATE FOR THE COMPANY TO HAVE PERFORMED A SANITY CHECK OR REASONABLENESS TEST OF ITS ESTIMATED FUTURE NET SALVAGE WITH INDUSTRY DATA PRIOR TO FINALIZING ITS PROPOSAL?

A. Yes. Moreover, so does Mr. Robinson. Mr. Robinson stated during a case in 2003, before the Kansas Corporation Commission, that the "industry data is just one additional sanity check of the reasonableness of the life estimate for the Company's property."[15] While the reference is to service life, the same is applicable to net salvage estimates.

Q. WHAT WOULD MR. ROBINSON HAVE FOUND HAD HE REVIEWED INDUSTRY DATA AS A SANITY CHECK OR CHECK OF

[15] Mr. Robinson's rebuttal testimony, Docket No. O3-KGSG-602-RTS at page 24.

REASONABLENESS FOR HIS NEGATIVE 170% NET SALVAGE PROPOSAL?

A. Mr. Robinson would have found that the industry average, depending on the measuring index, reasonably falls between a negative 45% and a negative 105%.[16] Moreover, as previously noted, the industry relationship between the negative net salvage proposed for distribution services compared to distribution mains is only a 2.5 to 1 ratio, rather than the 11 to 1 as proposed by Mr. Robinson.

Q. MR. ROBINSON HAS TESTIFIED RECENTLY IN OTHER JURISDICTIONS FOR LOCAL GAS DISTRIBUTION SYSTEMS, WHAT NET SALVAGE LEVELS DID HE PROPOSE IN THOSE PROCEEDINGS?

A. Mr. Robinson proposed a negative 40% net salvage for distribution services in the recent case before the Kansas Corporation Commission on behalf of the Kansas Gas Services Company.[17] He also proposed a negative 55% for the same account in a Louisville Gas & Electric case in 2003.[18] Moreover, this proposal represented a reduction from the existing negative 75% value.

Q. WHAT IS YOUR RECOMMENDATION FOR NET SALVAGE FOR THIS ACCOUNT?

A. I recommend a negative 110% net salvage. While I believe this value may still be too negative, it is more appropriate than the negative 170% proposed by the Company. The recommended value is equal to the average of the 4 years during the past 10 years that experienced the largest level of dollar retirement activity. The recommendation is still above the high end of the industry average range and also recognizes, to a limited extent, the accounting treatment followed by the Company for mains (i.e., costs that might be considered cost of removal are

[16] The mean, median, and mode are approximately negative 105%, negative 70%, and negative 45%, respectively.
[17] Mr. Robinson's direct testimony in Docket No. 03-KGSG-602-RTS at page 4-28.

booked to the cost of the replacement addition). Finally, this recommendation is more in line with the approach employed by Mr. Robinson in his 1991 study for the Company, where a lesser negative net salvage was proposed than indicated in the data.

To the extent the Department is inclined to bring the Company more in line with industry expectations and the relationship exhibited by the Company with Account 376 – distribution mains, it would be well within reasonable bounds to reduce the negative net salvage for this account to a range between negative 50% and negative 75%. Net salvage at these levels would also be more in line with Mr. Robinson's recent experience and judgment in other jurisdictions.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. While the historical data is more than suspect, it is the only Company specific data available. Based on a review of that data, it is clear that when larger quantities of retirement activity (dollars) occur in a given year, the percent of net salvage decreases to levels even lower than the existing negative 140% or the proposed negative 170%. This relationship may be indicative of the concept of economies of scale that is applicable to utility plant retirement activity. Another consideration in my recommendation is that the Company either abandons in place or replaces services for the most part, if not almost exclusively.

To the extent the Company simply abandons services, one would expect the level of cost of removal, and thus negative net salvage, to be much lower than the negative 170% or even negative 110% level. In fact, if the Company is replacing mains at the same time it is replacing services, then very little cost should be associated with the retirement of a service since the activity associated with retirement in those instances should not require as much excavation and removal as would be the case of instances where services were completely extracted from the ground. If the Company follows the consistent accounting that

[18] Mr. Robinson's direct testimony in Case No: 2003-004-33, dated 12/29/03 before the Public Service Commission of Kentucky.

it has utilized for Account 376 - distribution mains, then in instances where replacement activity occurs, costs that the Company might normally consider cost of removal should be categorized as a cost of the new addition. That is the appropriate way to treat such costs. If that practice were followed, a value much closer to a negative 50% or less would be more appropriate. Finally, my recommendation ignores the fatally flawed inflation based forecast of cost of removal Mr. Robinson references in this testimony (Mr. Robinson also chooses to ignore the results of his inflation analysis since his proposal was only about 40% of his forecasted level).

Q. DO YOU HAVE ANY FURTHER RECOMMENDATIONS REGARDING THIS ACCOUNT?

A. Yes. I recommend that the Department order the Company to specifically, thoroughly and in great detail present all justification for whatever level of net salvage it proposes in its next depreciation study. The Department should direct the Company to meet its burden of proof in demonstrating the reasonableness of its proposal, rather than submit the generalities contained in this filing where it failed to demonstrate a specific identifiable approach to the establishment of a very specific value.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. My recommendation for a negative 110% net salvage reduces the Company's depreciation expense by $3,106,065 on a stand-alone basis, and a $3,271,073 reduction based on plant as of December 31, 2004.

SECTION IV. – MASS PROPERTY LIFE ANALYSIS

A. GENERAL

Q. WHAT IS THE PURPOSE OF THE LIFE PORTION OF A DEPRECIATION ANALYSIS?

A. The purpose of a life analysis is to determine the ASL, the dispersion pattern, and remaining life for each account or sub-account. This information is necessary, in order to properly perform the depreciation calculation previously noted. A longer ASL normally results in a longer remaining life and therefore in a lower depreciation expense. Alternatively, a shorter ASL will normally reduce the remaining life and increase depreciation expense. The dispersion pattern is also important, as it is critical in the overall selection process of the best fitting results. The same ASL with a different Iowa Survivor Curve also results in different remaining lives. Appendix B sets forth basic information relating to Iowa Survivor Curves that are used in the life analysis process.

Q. WHAT ARE THE MAIN TOOLS UTILIZED IN PERFORMING LIFE ANALYSES?

A. Life analyses are normally performed either through the use of actuarial or semi-actuarial analyses. Actuarial analyses rely on aged data. In other words, when an item of property is retired, the age at retirement is known. This is identical to the type of analysis performed by insurance companies in obtaining life tables in order to establish premiums. Semi-actuarial analyses are performed in instances when the age of plant retired is not known.

Q. WHAT LIFE ANALYSIS METHOD DID THE COMPANY USE?

A. The Company employed actuarial analysis. The actuarial analysis relied upon is the Retirement Rate Method. This approach relies on aged data. In other words, when plant is retired, the year of installation for that retirement is identifiable. The analysis creates an observed life table, which identifies the dollars retired within each separate 1-year age interval. The age retirements are then divided by the dollars of plant exposed to the forces of retirement at the beginning of each age interval to determine an annual retirement ratio. Beginning with a 100% surviving level at age 0, the annual retirement ratios are sequentially multiplied to produce the observed surviving pattern. A depreciation analyst then matches a

standardized Iowa Surviving Curve to the observed life table as part of the establishment of the most representative life-curve combination.

Q. WHAT HAS THE COMPANY PROPOSED FOR ACCOUNT 367 – DISTRIBUTION MAINS?

A. The Company segregates its $296 million investment in mains into six subcategories, as noted below:

Acct.	Description	P-I-S 12/31/03	ASL/Curve
376.10	Cast Iron Mains	$5,710,347	75-R2
376.20	Steel Mains – Coated/Wrapped	$143,919,725	55-R4
376.30	Steel Mains – Bare	$2,564,983	74-R3
376.40	Plastic Mains	$116,579,215	55-S2
376.50	Joint Seals	$19,580,594	23-R5
376.60	Cathodic Protection	$7,381,476	19-S5

Also set forth in the table above are the Company's proposed ASLs and corresponding Iowa Survivor Curves for each of the sub-accounts into which it segregates its mains investment. These ASLs range from a low of 19 years for cathodic protection to a high of 75 years for cast iron mains.

Q. BASED ON YOUR REVIEW OF THE COMPANY'S LIFE ANALYSES, ARE YOU RECOMMENDING ADJUSTMENTS?

A. Yes. I am recommending adjustments for two sub-accounts. The existing parameters, my recommendations, as well as the Company's proposals for each of the sub-accounts where a change is being made, are summarized in the table below.

Account Description	Existing Curve	Existing ASL	Company Curve	Company ASL	AG Curve	AG ASL
376.4 Mains - Plastic	R3	60	S2	55	S1.5	68
376.2 Steel Mains – Coated/Wrapped	R3	85	R4	55	R4	74

B. ACCOUNT SPECIFIC – LIFE ADJUSTMENTS

1. Plastic Mains

Q. WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSED 55-YEAR ASL AND S2 IOWA SURVIVOR CURVE FOR ACCOUNT 376.4 – PLASTIC MAINS?

A. The Company's basis is set forth on page 4-8 of its depreciation study, and consists of one paragraph:

> The Company's current investment relative to Plastic Mains is $116,579,215 and has achieved a current average age of 8.8 years. Retirements totaling $834,372 have occurred during the period 1975 – 2003 at an average age of 6.5 years. Giving consideration to the retirement rate analysis on the historical data, as well as other industry data, an Iowa 55-S2 life and curve is estimated for this property class. The resulting average remaining life of the property groups is 46.3 years. (Emphasis added)

Q. DOES THE GENERALIZED DISCUSSION IN THE ABOVE QUOTED PARAGRAPH RISE TO AN ADEQUATE OR APPROPRIATE LEVEL OF SUPPORT OR JUSTIFICATION FOR ITS PROPOSAL?

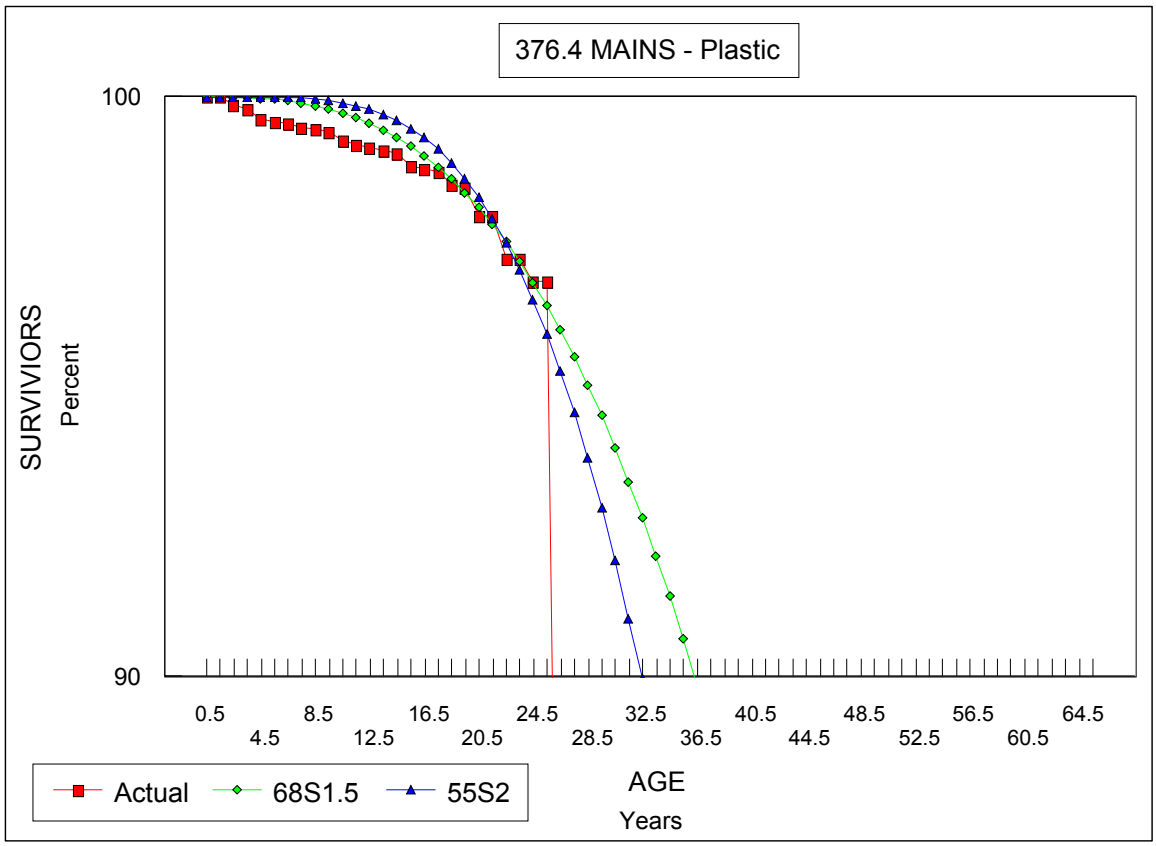
A. No. In fact, the only verifiable information of how the 55-S2 life-curve combination was obtained is the phrase "consideration to retirement rate analysis on the historical data." In other words, one must look at the results of the Company's life analysis. The reference to some undefined "other industry data" is meaningless by itself, and discussed later.

Q. WHAT SPECIFICALLY DID THE COMPANY PROVIDE REGARDING ITS LIFE ANALYSIS?

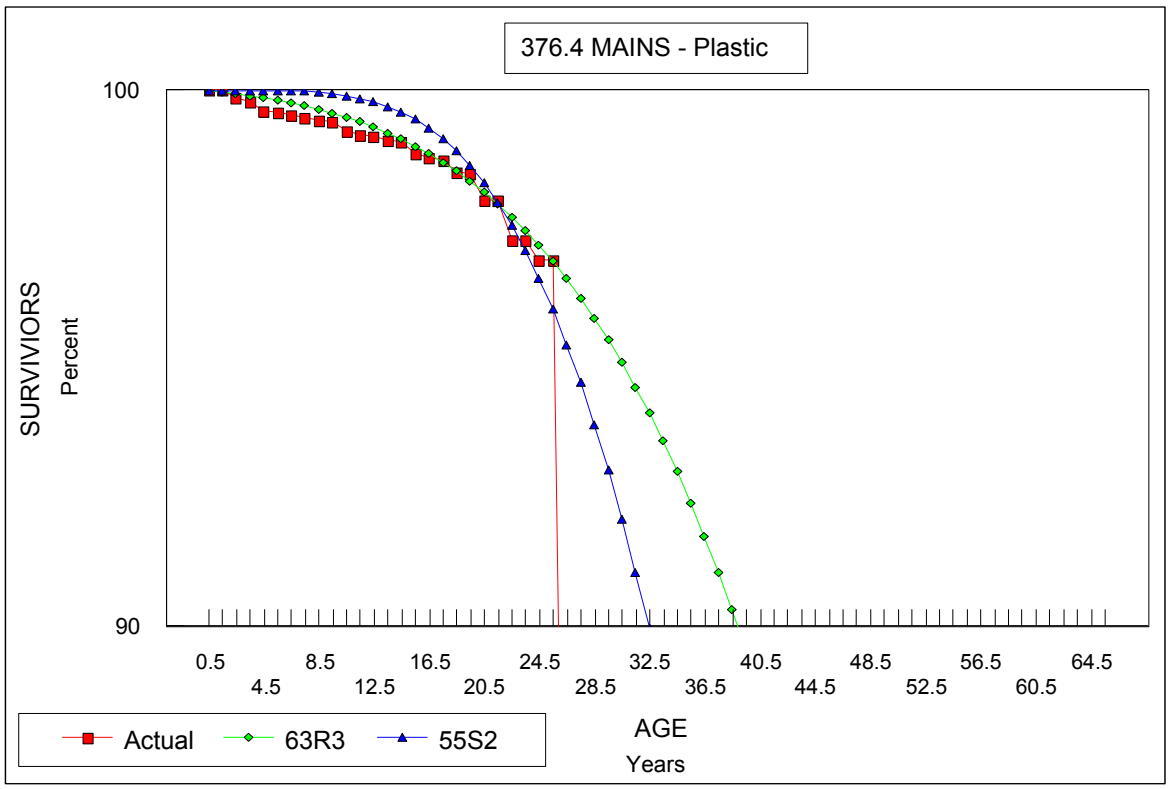
A. The Company's life analysis for Account 376.4 – Plastic Mains is set forth on pages 5-29 and 5-30 of its depreciation study. There the Company presents a graphical presentation of its proposed survivor curve superimposed over the actual retirement data based on retirement experience occurring between 1975 and 2003. The Company also provides the numeric observed life table from which the graphical presentation was derived.

Q. AFTER REVIEW OF THESE TWO LIFE ANALYSIS PAGES, DO YOU BELIEVE THE COMPANY HAS PRESENTED A VALID BASIS FOR ITS PROPOSAL?

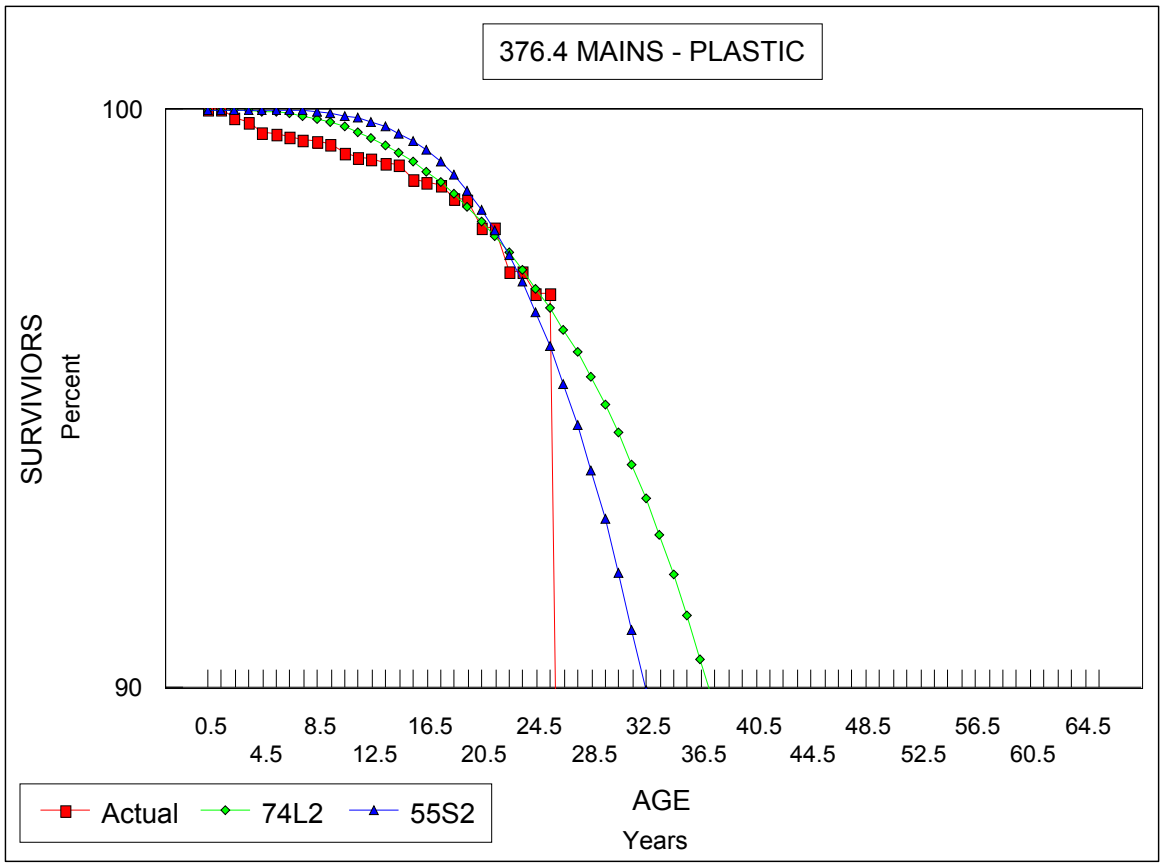
A. No. The life analysis selection as proposed by the Company ranges between arbitrary and being less than the best fit of the available data. For example, the following three graphs set forth a comparison between the actual data through the meaningful portion of the curve (i.e. through age 25), and the Company's proposed 55-S2 life-curve combination compared to <u>better</u> fitting life-curve combinations for each type of Iowa Survivor Curve (i.e., a right modal ("R"), symmetrical modal ("S"), and left modal ("L")). As can be seen in the first graph, I have set forth the graphical depiction of the Company's proposal, actual data, and a 68-S1.5 Iowa Survivor Curve. In the second graph, I have set forth the same information, but this time I superimposed a 63-R3 life-curve combination. In the third graph, I have set forth the same information, but this time I superimposed a 74-L2, life-curve combination. As can be seen in each of the graphs, the longer ASLs with different dispersion patterns that I have superimposed are better fits through the meaningful portion of the curve.


376.4 MAINS - Plastic
100
90
SURVIVIORS
Percent
0.5
4.5
8.5
12.5
16.5
20.5
24.5
28.5
32.5
36.5
40.5
44.5
48.5
52.5
56.5
60.5
64.5
Actual
68S1.5
55S2
AGE
Years

1


376.4 MAINS - Plastic
100
90
SURVIVIORS
Percent
0.5
4.5
8.5
12.5
16.5
20.5
24.5
28.5
32.5
36.5
40.5
44.5
48.5
52.5
56.5
60.5
64.5
Actual
63R3
55S2
AGE
Years

2



Q. WHAT DO YOU MEAN WHEN YOU STATE "THROUGH THE MEANINGFUL PORTION OF THE CURVE"?

A. The actual data declines from approximately 97% surviving around 25 years of age to 80% surviving in the 26th year of age.[19] While this decline from 97% surviving to 80% surviving is depicted in the data, it is based on a retirement of only $3,283.47.[20] This level of retirement is associated with a surviving balance exposed to retirement activity of only $18,905.04.[21] This dollar level of retirements and corresponding investment exposed to retirements pale in comparison to the $100,000,000 plus amounts reflected in the early ages of the same account (see data on page 5-30 of the depreciation study). In other words, both Mr. Robinson and I recognize the inappropriateness of relying on the sharp

[19] While both the 97% and 80% surviving levels represent what is normally called "stub" curves, they represent all of the historical data available from the 1975-2003 experience band analyzed.
[20] Company's depreciation study page 5-30, line 24.5-25.5.
[21] Id.

decline between ages 25 and 26 due to an extremely small dollar level of retirement that may be atypical or unusual, and not indicative of what one would expect in the future. This represents the concept of materiality, which addresses whether the data is adequately robust in order to rely on it as being representative.

Q. DO YOU HAVE FURTHER REASON TO BELIEVE THAT THE LARGE PERCENT RELATIONSHIP OF RETIREMENT TO EXPOSURES BETWEEN 25 AND 26 YEARS OF AGE SHOULD BE DISCOUNTED?

A. Yes. While I do not know the specific underlying rationale for Mr. Robinson's decision to also ignore this data, my review of the data clearly identifies that the retired plant corresponds to the second year in history when the Company began the installation of plastic mains. The industry experienced problems with early plastic pipe installed during this same period. Some of the industry problems, which resulted in abnormal early retirements, were due sometimes to installation practices, or to poor chemical composition of plastic resin. The key point is that there is a logical basis to completely ignore the dramatic change in the survivor curve between the ages of approximately 25 and 26 even without specific confirmation from the Company regarding the actual underlying circumstance of that retirement.

Q. IN YOUR OPINION, IS THERE ANY VALID BASIS TO SUPPORT A SERVICE LIFE AS SHORT AS THE 55-YEAR LIFE PROPOSED BY THE COMPANY, BASED SOLELY ON THE LIFE ANALYSIS?

A. No. As shown in the three graphs above, I have set forth better fitting dispersion curves for "R", "S", and "L" shaped Iowa Survivor Curves. Each of the curves identified have longer ASLs then the 55-year proposed by the Company. This clearly indicates that the 55-year life proposed by the Company is too short, at least from a curve fitting standpoint.

Q. DID THE COMPANY'S DEPRECIATION STUDY PROVIDE THE UNDERLYING INDUSTRY DATA AND SPECIFIC ANALYSIS IT PERFORMED AND REFERENCED?

A. No.

Q. DID THE COMPANY PROVIDE ITS INDUSTRY COMPARATIVE ANALYSIS FOR THIS ACCOUNT WHEN REQUESTED TO DO SO IN DISCOVERY?

A. No. In information request AG-8-40, the Company was specifically requested to "provide a copy of the most recent industry surveys of depreciation statistics in the possession of either the Company or Mr. Robinson as it pertains to the energy related utilities." The Company responded by stating that the "industry statistics as they relate to the property accounts within the depreciation study for which reference was made to industry data" are set forth in the response. A review of the information that followed in the response did not set forth any information for Account 376.4 or for any other mains account. This failure to provide any data is contrary to the specific reference to "other industry data" previously noted in the one paragraph narrative portion of the depreciation study that applies to plastic mains. Although, the Company made specific reference to industry data for the basis for its proposed ASL associated with plastic mains and later stated that it was providing industry comparative data analyzed in those areas where industry data was referenced, its filing and the data response are devoid of any industry information applicable to mains.

Q. HAVE YOU REVIEWED INDUSTRY DATA APPLICABLE TO PLANT INVESTMENT FOR THIS ACCOUNT?

A. Yes. An industry survey that Mr. Robinson helps compile presents limited information regarding plastic mains. That information indicates ASLs range from a low of 50-years to a high of 75-years, but is only based on little more than a handful of companies as it applies specifically to identifiable plastic mains.

Moreover, the industry data compiled by Mr. Robinson is based on studies some of which are approximately 20 years old. Given the dates of those studies, they would have relied on retirements associated with plastic investment that were in service for approximately a decade or two. That time frame places them directly in the time frame of the previously noted industry problems with early plastic mains. Therefore, the only logical conclusion from the industry data that Mr. Robinson might have reviewed should have indicated that something at the higher end of the range, rather than the lower end of the range, would be more indicative of current investment in plastic mains.

Q. IS THERE ANOTHER CONSIDERATION MR. ROBINSON SHOULD HAVE TAKEN INTO ACCOUNT WHEN REVIEWING INDUSTRY DATA?

A. Yes. The same industry information also reflects some limited information regarding cast iron pipes. A comparison of the 75-year proposal for cast iron by Mr. Robinson to the industry data specifically for cast iron that ranged from 55 to 75 years indicates that the Company's proposed ASL was at the high end of the range of industry ASLs. Given this relationship for cast iron mains, the logical inference would lead to a conclusion that plastic mains should also fall near the high end of the industry range, all else equal. In other words, if the Company appears to be experiencing life characteristics for cast iron near the upper end of the industry range, then one would expect to a certain extent that the life expectations for plastic for this Company would also be at the high end of the industry range absent other meaningful information. , Mr. Robinson's failure to properly analyze industry data goes to the credibility of what appears to be an inadequate ASL level for the Company's investment in plastic mains.

Q. WHAT DO YOU RECOMMEND FOR THIS ACCOUNT?

A. I recommend a 68-S1.5 life-curve combination.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on review and analysis of the historical data, review of industry data, direct comparisons within this particular Company as it pertains to other types of distribution mains, and reliance on underlying fundamentals that affected the industry during the early periods of plastic placement.

More specifically, analysis of the historical data, through the meaningful portion of the observed life table, would result in a 68-year ASL as a more appropriate estimate. Also, industry data would indicate that an ASL closer to the upper 60 to low 70-year range is more representative of what can be expected. As time progresses and more actual data becomes available a revision to the proposed ASL may be appropriate. At this time, however, based on the best available information, it is clear that the Company's proposal is too short and must be lengthened.

Q. WHAT WAS THE IMPACT OF YOUR RECOMMENDATION?

A. The stand-alone impact of increasing the ASL and changing the dispersion pattern as I recommended results in a $547,922 decrease to the Company's proposed depreciation request based on plant as of the end of 2003, and a $592,556 reduction based on plant as of the end of 2004.

2. <u>Steel Mains – Coated/Wrapped</u>

Q. WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSED 55-R4 LIFE CURVE COMBINATION FOR ACCOUNT 376.2 – STEEL MAINS – COATED/WRAPPED?

A. Once again, the Company provided one short paragraph of narrative associated with its proposal for this sub-account. That paragraph as set forth on page 4-7 of the Company's 2003 depreciation study is:

> The Company's investment in Coated and Wrapped Steel Mains totaling $143,919,725 has achieved an average age of 23.0 years. During the 1975-2003 period, retirements totaling $2,423,506 have occurred at an average age of 22.1 years. <u>Based upon an analysis of the data via the Retirement Rate Method</u>, an Iowa 55-R4 life and

curve is estimated as the applicable life of the property group. Application of the estimated service life parameters to the current investment produces an average remaining life of 33.0 years. (Emphasis added)

Q. DOES THIS PARAGRAPH ADEQUATELY DEMONSTRATE THE REASONABLENESS OF THE COMPANY'S 55-R4 LIFE-CURVE COMBINATION PROPOSAL?

A. No, not by itself. This narrative basically states that the Company performed an actuarial analysis for a 29-year historical experience period to arrive at its proposal. Thus, the Company's basis for its proposal must be viewed only from the context of its analytical analysis as set forth on pages 5-22 through 5-24 of its depreciation study.

Q. HAVE YOU REVIEWED THE COMPANY'S LIFE ANALYSIS FOR THIS SUB-ACCOUNT?

A. Yes.

Q. BASED ON YOUR REVIEW, DOES THE ACTUARIAL ANALYSIS PERFORMED BY THE COMPANY SUBSTANTIATE ITS PROPOSAL?

A. No. Mr. Robinson's life analysis forces a selection that is inappropriate. As previously noted for Account 376.4 – plastic mains, Mr. Robinson heavily discounted or totally ignored a data point that was not representative or meaningful from the standpoint of life analysis. However, for this sub-account, Mr. Robinson in effect did the opposite. He ignored the very meaningful data in the life analysis in order to select a short ASL by forcing the curve fitting results through the activity associated with insignificant amounts of retirements and surviving plant values. This process employed is simply inappropriate and unacceptable.

Q. PLEASE EXPLAIN THE PROBLEM YOU ARE REFERRING TO.

A. As can be seen on the graph on page 5-22 of the Company's depreciation study, the Company's proposed 55-R4 life-curve combination begins to deviate from the actual experience at approximately 32 years of age. In fact, at approximately 50 years of age the survivor curve deviates by almost 25 percentage points (95% - 70%). Mr. Robinson's selection is geared towards matching the tail portion of the curve, which is reflective of the actual data beyond 53-years of age.

Q. WHY IS MR. ROBINSON'S FORCED FITTING OF THE LIFE-CURVE COMBINATION TO THE TAIL PORTION OF THE CURVE INAPPROPRIATE?

A. As can be seen from observing the historical data set forth on pages 5-23 and 5-24 of the Company's depreciation study. As can be seen there, during the early age intervals the surviving balance exposed to retirements are in the low to mid $90 million range. The amounts decline over time down to only a few million dollars as the age approaches 50 years. The tail portion of the curve that Mr. Robinson attempts to force fit begins at approximately the 50-year range and older. As can be seen on page 5-24 of the depreciation study, the total dollars of exposure in these data points of the tail of the curve range from a high of $12,500 down to only $784. If Mr. Robinson believes the retirement activity with such a small level of dollar and corresponding small dollar level of exposure to retirement reasonably compares to the $10s of millions of exposures higher in the curve and up to approximately $100 million at the head of the curve, then he is simply wrong.

It should be clear, even to a non-expert, that intuitively, numerous events that are representative of tens of millions of dollars of activity are more meaningful from a standpoint of drawing inference, than is a single or limited level of activity. This is especially true when the meaningful data is over 7,000 times greater.[22]

[22] Company's depreciation study at pages 5-23 and 5-24, $96,303,790 of surviving balance at age intervals of 7.5 to 8.5 divided by $12,563 reflected in age interval 50.5 – 51.5.

Q. CAN THE TAIL OF THE CURVE, AS DEPICTED ON PAGE 5-22 OF THE COMPANY'S DEPRECIATION STUDY, CHANGE SIGNIFICANTLY AS FUTURE OCCURRENCES TRANSPIRE?

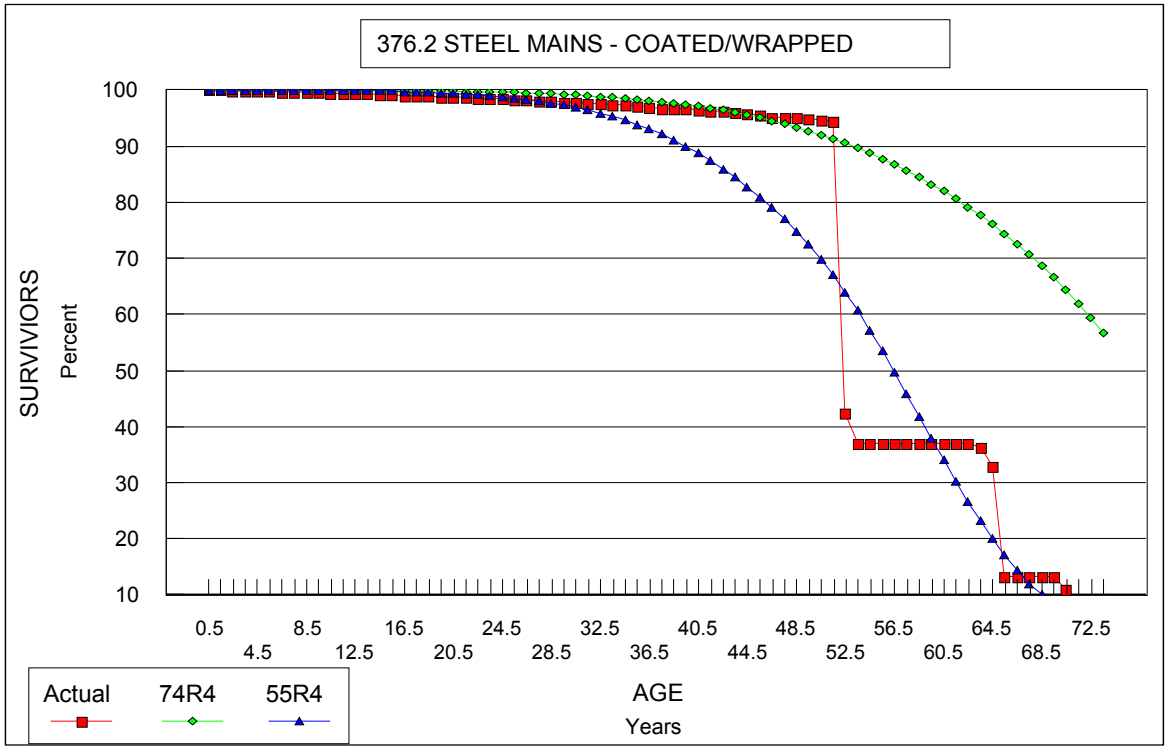
A. Yes. In fact, the change can be rather dramatic as each additional year of activity occurs beginning in 2004 and forward as it will step down through the age intervals as each surviving dollar of investment becomes a year older each year. This is significant because the dollar level of surviving plant in the immediately prior age interval to the one that caused the dramatic decline is $864,000 or approximately 69 times greater than the age interval that caused the significant reduction in the survivor curve. Thus, the Company would have to experience an approximately $475,000 level of retirements associated with the $864,000 of exposure in 2004 to have the same relationship exist at that same age interval. Alternatively, the top or head portion of the survivor curve will continue out to the right of the graph (older ages) and not decline in the same manner at approximately age 50, unless sizeable retirements occur in those corresponding age intervals.

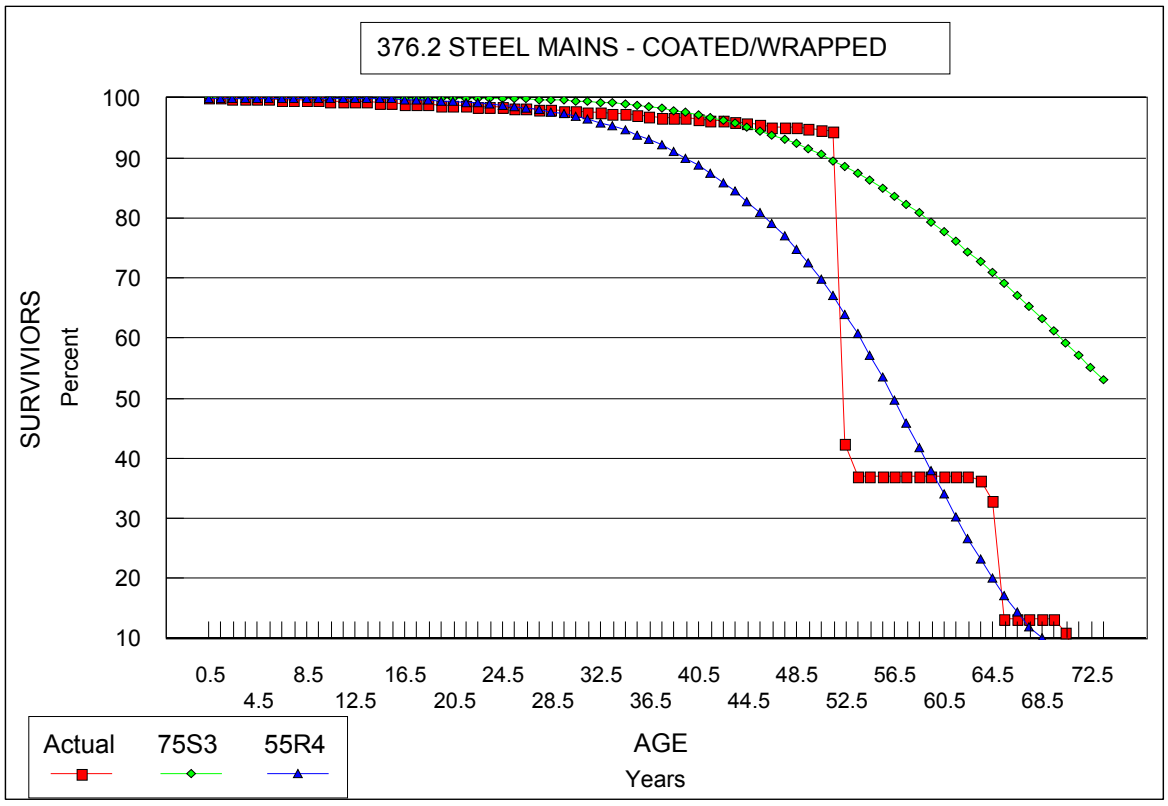
Q. ISN'T THE COMPANY IN THE PROCESS OF REPLACING WRAPPED STEEL THAT IS EXPERIENCING SIGNIFICANT LEAKS?

A. Yes, that is my understanding. Unfortunately, the Company does not maintain its data broken up between coated and wrapped steel. Thus, it would be impossible to determine from the data available the age and dollar level of the wrapped steel it will be retiring. Notwithstanding the potential for the retirement of wrapped steel due to high levels of gas main leaks, the majority of the Company's investment is most likely not associated with coated or wrapped steel experiencing significant levels of leaks. Since we are attempting to match the survivor pattern for the remaining current investment, one would anticipate that the severe drop off that is experienced by the Company around 50 plus years of age is <u>not</u> indicative of the majority of the investment currently surviving.

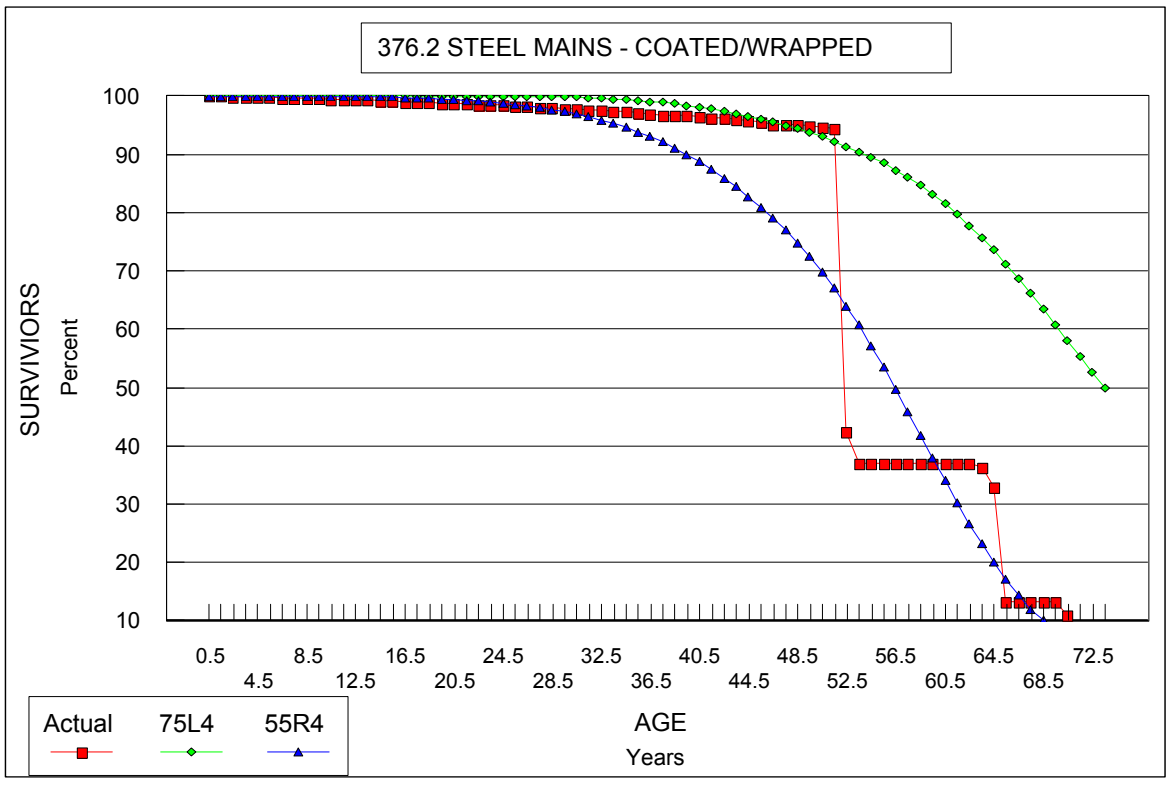
Q. IN YOUR OPINION, WHAT ARE THE BEST FITTING IOWA CURVES FOR EACH TYPE OF IOWA CURVE?

A. I have set forth three graphs below. Each graph sets forth the actual historical data for this sub-account, the Company's proposed 55-R4 life-curve combination, and what I believe are the best fitting Iowa Survivor Curves for "R", "S", and "L" modal categories. As can be seen in the graphs below, an ASL value in the mid 70-year range, whether it be "R", "S" or "L" type Iowa curve, are much better fit though the meaningful portion of the historical data than is the Company's proposal. Again, it must be noted that the meaningful portion of the curve discounts the significant drop in the survivor curve that occurs at approximately age 50 as set forth on page 5-22 of the Company's depreciation study.




376.2 STEEL MAINS - COATED/WRAPPED
SURVIVIORS
Percent
100
90
80
70
60
50
40
30
20
10
0.5
4.5
8.5
12.5
16.5
20.5
24.5
28.5
32.5
36.5
40.5
44.5
48.5
52.5
56.5
60.5
64.5
68.5
72.5
Actual
75S3
55R4
AGE
Years

1


376.2 STEEL MAINS - COATED/WRAPPED
SURVIVIORS
Percent
100
90
80
70
60
50
40
30
20
10
0.5
4.5
8.5
12.5
16.5
20.5
24.5
28.5
32.5
36.5
40.5
44.5
48.5
52.5
56.5
60.5
64.5
68.5
72.5
Actual
75L4
55R4
AGE
Years

2

3

Q. WHAT IS YOUR RECOMMENDATION?

A. I recommend a 74-R4 life-curve combination. My recommendation is based on the best fitting curve relationship and recognition of the ASL and curve proposed by the Company for Account 376.3 – Steel Mains – Bare (74-R3). Limited inferences obtained from industry comparison would also indicate that the 74-year ASL is reasonable. The inferences obtained from the same industry data that Mr. Robinson helps compile recognize that the Company's proposal for its cast iron mains is at the upper end of the range for the industry. This relationship indicates that it might be appropriate that the life characteristics for coated and wrapped steel should also be near the upper end of the industry range. In other words, absent the unusual problem that the Company is currently experiencing with wrapped steel, one would anticipate a long ASL from protected steel mains. One additional factor considered is that the existing ASL is 85-years.[23] This means the Company is proposing a dramatic decline in ASL of 30 years (85-55). A change of this magnitude is not warranted based on the data or the Company's presentation. Moreover, it ignores the concept of gradualism.

Q. DOES MR. ROBINSON RECOGNIZE THE CONCEPT OF GRADUALISM ELSEWHERE?

A. Yes. In a data response in a current case in Florida, he not only recognized the concept of gradualism, but also employed it in making his proposal. In that instance, he proposed a negative 15% net salvage when his forecast analyses indicated a negative 30% was appropriate. He took the action since "conservatism suggests a more gradual movement in that direction."[24]

Q. WHY DOESN'T THE COMPANY'S CURRENT PROGRAM OF REPLACING WRAPPED STEEL CAUSE YOU TO PROPOSE A SHORTER AVERAGE SERVICE LIFE?

[23] Company depreciation study at page 2-3, column (d).
[24] Response to Citizens 174 before the Florida Public Service Commission in Docket No. 050078-EL.

A. There are two reasons. First, the meaningful portion of the curve already includes, to some degree, the impact of the Company's replacement of wrapped steel that has experienced high levels of leaks. Thus, the historic data already encompasses the problem at hand to the extent incurred through 2003. This may be why there is an 11-year reduction (based on my recommendation) in ASL from the existing ASL (85-74). In addition, the magnitude of dollars at issue associated with the wrapped pipe that needs to be replaced may actually be a relatively small percentage of the outstanding $144 million of plant in service as of the end of 2003. Further, the retirement of the pipe experiencing high levels of leaks is not indicative of what can be expected from the majority of the investment currently in place as it ages in the future.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. My recommendation on a stand-alone basis results in a reduction to the Company's requested depreciation expense by $1,309,670 based on plant as of the end of 2003, and a $1,329,662 reduction based on plant as of the end of 2004.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes. However, to the extent I have not addressed a procedure, method account, etc., it should not be taken as my agreement with the Company's proposal.